PHOTO ERA

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THE UNCONVENTIONAL IN PORTRAIT PHOTOGRAPHY

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THERE has been of late a good deal of theorizing as to whether photography can be reckoned among the fine arts, and the camera be considered a medium for the interpretation of art as understood by painters, sculptors, and draughtsmen. This question seems to be a strictly professional one, which those few photographers, who profess these high artistic aims, scrupulously live up to their principles, and have the ability to practise them, must settle for themselves.

True enough, the camera, by reason of its cheapness and the ease with which it may be used as a means of noting things seen, has become so popular that, according to statistics, nearly twenty-five per cent of our entire population have turned photographers. But the average amateur is not concerned with scholastic discussions; for him photography is a pastime, and he is glad if he has not ruined twenty plates before securing a negative. To technical merits, such as composition, color, quality, tone, and lighting, the large majority always remain indifferent.

But there is one phase of photography in which the public has always been interested ever since Daguerre discovered the principles of "photographic action," — namely, portrait photography. To have one's picture taken is a fashion that apparently will never grow old. Each man and woman, no matter of what station, will at one or another time in their lives submit to this record of facts; and the result will surely be criticized by their entire family, and all friends and acquaintances who think they have a right to sit in judgment upon it. But the criticism is generally not on esthetic lines. The question which interests them most is whether the picture is a good likeness or not. By this verdict, in their eyes, stands or falls the merit of the picture. And the position the public takes in this matter is a perfectly sane one.

The aim of portrait photography should be preeminently to produce a likeness, — a likeness that reveals in one attitude as much of the sitter's individuality as is possible in a flat surface view. Beauty of outline, truth of value, division of space, contrast of light and shade, harmony of tone, — all are secondary attributes. The sitter has the right to demand, first of all, a likeness, and ought to have one for the time and money he spends; but that this is rarely the case every one knows who has sat for a portrait. It is not an easy task, as the sitter him-

self, the members of his family, his friends, and his acquaintances all have formed their opinions about his looks, and the portrait photographer must possess the gift to discover these characteristic traits which appeal to the sitter's inner circle of friends. And the difficulty lies in the fact that two people hardly ever agree upon that subject.

Although photographic workers tell us that no one lens is like another, that each has, in its way, an individuality of its own, the camera is, after all, the best medium of expressing a likeness. For certain things it is always correct; a man with a Cyrano de Bergerac nose will never be represented by any lens as having a Roman or Grecian nose, as it happens at times in portrait painting. Yet there are other drawbacks. The portrait photographer is continually confronted by people he has never seen before. He cannot get acquainted with them like the painter, who commands numerous sittings; he has to rely on his first impression. And how little freedom in executive expression his mechanical process affords him! Everything is concentrated upon a few seconds, when after perhaps half an hour's seeking, waiting, and hesitation the operator sees the realization of his inward vision. In that one moment, however, he has one advantage over most arts, — his medium is swift enough to record his momentary inspiration.

The pictorial movement, which works towards more artistic ends, has naturally also affected portrait photography. It is plainly evident on all sides, from the modest show-case of the humblest village photographer to the most pretentious of the lavish metropolitan establishments. Everywhere the professional photographer is breaking away from the painted backgrounds, the papier-mache accessories, the high-backed chair and column, the head-rest and top light. The potted palms and artificial flowers are being thrown out into the junk heap along with the awkward poses and other affectations of former years. The mounting of photographs on stiff board, which could only be put in albums or used as bric-a-brac frames on mantelpieces, etc., has given way to the custom of mounting the prints on large gray or brown sheets of paper with rough edges and overlapping covers. The professional print has acquired a pictorial significance, for this innovation in mounting is really nothing but an invitation to buy a frame for the print and hang it on the wall.

The chief factor in the transformation is the amateur. The professional photographers have been interested merely in bringing the mechanical side to perfection, completely ignoring the fact that a more tasteful and elegant result could be obtained. The many inventions in the processes of photography, however, made the practise of this science possible to the amateur, and he, in his ignorance, dared to attempt that which the professional thought impossible. He has made many failures, to be sure, but the little artistic leaven judiciously introduced by him has gone some way towards leavening the whole. An important change has been wrought by his experiments; photography has put on a new garb and takes a place among those things which delight the artistic sense.

Many photographers began to realize the advisability of a departure from the old stereotyped portrait, and although the trammels of livelihood making necessary caution and a frequent yielding to the wishes of their customers, the production of better work was increasing. The portraits reproduced with this article are different from the thousand and one specimens seen in the average

show-case or window. They possess individuality to a considerable degree, — the individuality of the sitter is caught and represented; the individuality of the photographer is embodied in his work. But the change is not an entirely satisfactory one. Although the artistic standard of the work throughout the country has been raised considerably, — we see no longer persons posed in awkward poses amidst surroundings execrable in their ugliness, — the getting of likeness has suffered thereby. For many of the "advanced pictorial photographers," as they call themselves, sacrifice everything, even ordinary common sense, in order to secure a pictorial effect. They represent their sitters in keeping with their own artistic fancies, or take mediocre painters as models for their composition, and the results of course are disastrous. Others imitate, by all sorts of trickery, black and white processes, and the pictorial side of painting in general, and produce something which, in my opinion, will become in time as unbearable as the old-fashioned photographs. Some of these innovators devote themselves to portraiture, and make you look like a Holbein or a Durer drawing, like an etching or a charcoal drawing, like a reproduction of a painting, or like a Japanese ghost, all wrapped in mist. Without a slouch hat or a big all-hiding mantle, a peculiar patterned gown, a shawl, or a piece of drapery they are unable to construct a portrait. They fail to master the modern garb — which is in no way less picturesque or less absurd (just as you like) than that of Holbein's or of Velasquez's time — and are as dependent on accessories, only of a different kind, as the old-fashioned photographer.

They argue that this is artistic. Their management of tone is often superb, and their division of space and the massing of light and shade compare favorably with the work of our best portrait painters. But why should a person submit to such a transformation? Why should an ordinary citizen be made to look like an old master? It was Thomas Carlyle, we believe, who said the best pictures for one's walls were portraits, — probably an expression similar to that which was in the mind of the photographer who said that *man* was the proper study for men. But it should be the portrayal of *character*, and not of pictorial effects, if portraits are to be generally interesting and ultimately prized.

Pictorial portraiture, even when at its very best, can never be anything but an esthetic enjoyment for the few, who like to see a personality delineated as another personality sees it, and which enjoyment increases the oftener it is repeated. Who would not, out of sheer vanity, like to have himself photographed by such skilful camera manipulators as E. J. Steichen, Gertrude Kasebier, C. H. White, Frank Eugene, Mathilde Weil, Rudolf Eickemeyer, Jr., F. H. Day, Elias Goldensky, or Alvin Langdon Coburn? Yet this only proves that portrait photography, as it is practised to-day, cannot be brought into perfect harmony with the demands made on it by the public, on whom it is after all dependent.

Lessing, who laid down fundamental laws for modern art with scientific accuracy in his "Laokoon" and "Hamburger Dramaturgie" which will resist the tide of many a century to come, did not grant portraiture a very high rank, because portraiture, although allowing ideality of expression, must be dominated by the necessity of producing a likeness, and thus it can only represent the ideal of a human being, not the ideal of humanity at large. And it seems that a portrait becomes a work of art only — we note this plainly in the works of Steichen — when sitter as well as operator has a strong and decided individuality. If these

conditions do not prevail, the portrait invariably becomes a conventional interpretation. To produce a likeness of an ordinary being — as most of us are after all — is impossible without ignoring the laws of art in some way or other; and sad to state, a portrait that is a work of art is rarely a perfect likeness.

The mission of photography is, after all, a democratic one, as it answers better than any medium of pictorial expression to the special necessities of a leveling age like ours. And as much as we would like to give the palm to individual expression, we fear that the idea of a likeness has too strong a hold on the public ever to be replaced by mere artistic qualities. But what is still more likely, is that there is ample room for the practise of both.

THE CHOICE OF A DEVELOPING FORMULA

DR. VIRGIL COBLENTZ

THE choice of a developing agent and the formula in which to employ that agent has always been a serious problem to the average photographer, whether he be amateur or professional, novice or adept. That this should be the case is surprising, inasmuch as a full knowledge of the various points of any agent can be obtained in a short time by making a few well-directed experiments. To do this requires no particular skill, and by exercising a little care and patience the average worker can arrive at satisfactory conclusions just as soon as he understands the first principles of development.

That such experiments are seldom made and that the knowledge of the agent in use is very limited is almost entirely due to the proneness on the part of the inexperienced to seek advice of fellow-workers, whose knowledge of the agent they recommend is limited to conclusions arrived at as a result of a few superficial trials, or is based on the biased opinions of writers with an "ax to grind." This being the case, it is quite apparent that the first use of any particular agent is largely a matter of circumstance. This "hit or miss" method of adopting a developer is very deplorable, and the object of this paper is to create interest in more scientific methods.

Many ways of testing developers may be suggested, but the simplest and most reliable method is by sensitometer test. The sensitometer may be one of the regular commercial outfits, such as the Chapman-Jones Plate Tester, or a simple device made by arranging a series of overlapping tissues in an ordinary printing-frame. A splendid way to prepare such a sensitometer is to back the tissues with a sheet of clear glass to which they should be permanently fastened, so that the sensitometer is always ready for use.

To facilitate the reading of the sensitometer, the different gradations or steps should be numbered: the first step, showing a density of one tissue, should be 1; the next, with two tissues, 2; and so on, up to 20 or 25, thus giving a scale of gradation even more differentiated than the tones of any subject. When a plate is exposed in this sensitometer before a standard light for a given length of time,

PORTRAIT OF LENBACH
BY E J STEICHEN

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SELF–PORTRAIT
BY E J STEICHEN

LADY WITH A CAT
BY EVA WATSON-SCHÜTZE

PHOTO ERA

PORTRAIT OF MISS A
BY RUDOLPH EICKEMEYER JR

PHOTO ERA

and then developed for a given time in a solution of known temperature, a negative is obtained giving a true record of the working qualities of the developer investigated.

The lower ranges, 1, 2, etc., correspond to the high lights of a regular negative, and show the density-giving properties of the developer, the tendency to block up, and the degree of halation to be expected; the middle ranges represent the half-tones, and the upper ranges the shadows, showing respectively the degree of softness or contrast and the detail-giving properties. The portions of the negative not affected by the light should, of course, be perfectly clear, and any deposit present indicates the fogging propensities of the developer. It can, therefore, be at once determined by comparisons with a negative made in a clear-working developer just how much detail is lost by this fault, which is undoubtedly the worst quality of any developer.

When comparing two or more developers, prepare an equal quantity of each and have them all of a uniform temperature. Then expose the plate for, say, 30 seconds at a distance of 24 inches from a standard candle (one burning about 120 grains an hour, which should have been burning at least 5 minutes before exposure is made), cut the plate in as many pieces as there are solutions to test, immerse them simultaneously in the solutions, continue the development for, say, 5 minutes, and fix as usual. When the pieces are washed and dried and the plate put together by being backed with a sheet of glass, the results can be readily examined and compared, and the relative qualities of each developer determined.

Do not, however, jump at conclusions from the first experiment. Repeat it at least three times, and then verify results by making at least one exposure in the camera. A few experiments will soon lead the conscientious worker to the conclusion that by intelligent handling, — that is, using each agent in the formula, state of dilution, or concentration, etc., best adapted to the work in hand, — he can produce almost any result desired with any one of the different agents, excepting possibly pyro and hydroquinone, neither of which yields quite as much detail as the other agents, which consequently would be excluded if a choice were to be made of a developer for high speed work, such as the finish of horse-races or field events late in the day.

The question of quality being thus disposed of, the next thing to consider is facility of working. Under this heading would come the keeping qualities in solutions ready for use, adaptability of the developer to all branches of photography and its latitude in manipulation. In these points the different agents will be found to vary greatly, and in making a choice the kind of work generally done by the experimenter would have to be taken into consideration. For instance, a newspaper man would have his choice limited to developing agents which he could keep on hand in solution available for immediate use and which he could use for plates, paper, or transparencies; while on the other hand a man doing studio work would have a wider field to choose from.

There are but two other points (of very little importance to some people but of great importance to others) that would have weight in making a choice. They are that most developers stain the hands and finger nails badly, while others have a poisonous influence on the whole system, producing disagreeable affections of the skin. Every one is not susceptible to these poisonous effects, but it goes with-

out saying that when the desired results can be obtained by the use of other agents, the ones having a tendency to poison should be avoided.

It may interest my readers to learn that during the past year I have made at least one hundred different experiments along the lines above suggested, involving all of the developers now in use; and by careful comparisons and eliminations I found that on points of merit edinol was far ahead of all the other agents. In each case I employed as far as possible the formulas recommended by the manufacturers.

In the sensitometer tests almost every other agent except edinol fogged during development; and when the developer was corrected to overcome the difficulty, detail in either the higher or lower ranges was sacrificed.

Edinol was never surpassed in detail-giving properties; and when equaled by any other agent, the high lights yielded by the latter invariably showed blocking up. The conclusion I reached was that edinol without doubt produced a negative of greater gradation than any of the others, besides yielding more detail and less halation.

I also find that by mixing it in different formulas the effect of almost every other agent could be obtained.

Really the only bad feature I discovered was its tendency to fix out, but this I soon found could be avoided by prolonging the development or using a little hydroquinone in connection with it. In fact I have adopted this modification for all of my work. The formula I use is: —

Water	10 ounces
Acetone sulphite	150 grains
Sodium sulphite (des.)	450 "
Edinol	60 "
Hydroquinone	30 "
Potassium Bromide	15 "
Potassium Carbonate (dry)	2 ounces

This makes a stock solution that keeps indefinitely, 1 ounce of it making 4 to 6 ounces of developer for plates or films, and from 6 to 10 ounces for paper or lantern slides.

The formula seems very complicated, but everything in it is there for a purpose, and I would not advise any changes.

Besides being a developer of such general utility, this formula, even though it does contain hydroquinone, does not stain the hands or finger nails and has no effect whatever upon the skin.

PHOTOGRAPHY IN SCIENCE AND EDUCATION

W. I. SCANDLIN

TO the average amateur following photography as a pastime, its real importance in the science and economy of the world seldom presents itself. A glance at some of its comparatively recent developments and achievements may be of more than passing interest at this time, as during its brief existence, covering considerably less than the average life of man, it has wrought wonders in many fields of research. What lies before it in the future cannot even be guessed at. If, however, its development in the next half century equals or approaches in importance that of its early history, it may prove to be one of the greatest blessings that the world has ever seen.

A noteworthy fact to be borne in mind in this connection is that many of the brightest achievements in the field of photographic research are due to the labors and investigations of amateurs, both in photography and applied science. The use of photography in our public schools through the half-tone reproductions in the school text-books and also by means of the lantern slide in the recitation room and lecture hall is becoming more and more universal and valuable. Teachers are equipping themselves with photographic outfits, primarily, in many cases, with the purpose of interesting their classes in out-of-door work and the study of natural history. Wherever the camera has been introduced on these lines, it has almost instantly brought about results that more than justified its introduction.

When we think of the multiplicity of uses to which photography may be and is brought in educational work, amazement is the only word that fittingly describes the situation. When we remember that up to a comparatively few years since, the microscopist, examining through the eyepiece of his microscope specimens of minute animal, insect, or vegetable life, could only portray to others what he himself saw by the aid of pen, pencil, or brush drawing, we begin to realize some of the difficulties encountered by the scientist before the camera's introduction. Drawings of microscopic enlargements are always extremely laborious and usually more or less imperfect. With the introduction of photography, however, all that is visible to the eye of the observer through the microscope may be instantly photographed in its enlarged state and projected, if desired, through the lantern upon a screen, there to be viewed by thousands of observers and in a very much larger state of magnification than the original photograph. The process occupies no appreciable time and produces results far and away better than even the best drawing possible by the artist observer under the old method.

In the field of astronomy, too, photography has performed feats almost incredible, recording upon the sensitive photographic plate images of stars so distant and so faint as to be quite undiscoverable by the naked eye; giving us pictures of the moon's surface, of the wonderful star clusters, comets, nebulæ, and many wonders of the firmament never dreamed of until its advent.

In the field of surgery the photographic dry plate, aided by the wonderful cathode rays, is giving to science pictures of the human body, showing its structure and locating foreign objects with unerring accuracy. In this field alone untold suffering has been averted. Many lives have thus far been saved and a future of untold promise lies before it. Some conception of the rapidity with

which this branch of photography has been developed may be had by comparing the time of exposures required in photographing the thorax seven or eight years ago and to-day. Exposures which then required from twenty to thirty seconds may now be more successfully made in less than a single second. While the denser portions of the human body were in the beginning almost impenetrable by the actinic ray, to-day no portion of the body can be hidden from its searching eye.

In the study of natural history, bird and animal life has been revealed to the student with an accuracy and fulness of detail hitherto impossible. Botany, geology, and every conceivable branch of natural science profits by its application. Photography is made to record electric disturbances in the ether about us; discharges from the Leyden jar, as well as from the heavens themselves, are faithfully transcribed in a space of time as brief as is the vision of the flash itself. Disturbances in the atmosphere are not exempt from its recording action; and the waves of air produced by bullets rapidly passing through it and even by the sound of the human voice may now be photographed.

Light from distant stars passed through the spectrum may be photographed and analyzed, and by the analysis may be determined the direction in which the heavenly bodies photographed are moving and a close approximation of the speed at which they move may be arrived at.

Investigations into photography above and beneath the surface of the earth are constantly being made. Balloonists and scientific kite-flyers are sending the camera aloft and by its means obtaining records of the country for miles about. A vast development is to be looked for in this direction during the coming years, when the camera will no doubt be adopted as a part of the equipment of every military and naval body taking the field or sea in the warfare of the future.

In surveying it has long been held as an important adjunct to the topographer's equipment. The writer has in mind one topographical map showing a large area of Alaskan territory plotted wholly from a series of fifty-six photographic negatives. Its use in this direction is constantly growing.

Submarine photography gives promise of results no less important than those obtained in aerial work. Experiments beneath the water are, as yet, almost in their infancy. Enough, however, has been obtained to show conclusively that important results may be expected in this direction. It is even claimed by a recent writer on this subject that the camera need not, of necessity be submerged to obtain pictures of what transpires beneath the water. It is said that if the photograph is made from a point sufficiently high above the surface to avoid reflection, the lens will search out that which is beneath, and in clear water will reveal the rocky or the sandy bottom at very considerable depths. This is an experiment that may be tried with little trouble.

The most important work, however, to be expected in submarine photography is that which will result from a submerged photographic outfit, provided with electric lights and expensive apparatus beyond the reach of the ordinary amateur. In subterranean work, — such, for instance, as the New York subway construction — photography plays a very important part in determining grades and settling damage suits.

In the science of criminology photography is playing a very important role, aiding in the detection of crime and criminals. It affords a means of comparing

THE KINGDOM OF CHILDHOOD
BY M u T BERNOULLI, BASEL

PHOTO ERA

"THESE ARE THE JEWELS OF MY CROWN"
BY HUGO ERFURTH, DRESDEN

PHOTO ERA

MOTHER AND CHILD
BY HUGO ERFURTH, DRESDEN

PHOTO ERA

MOTHER AND YOUNG BABE
BY W KÜBELER, DARMSTADT

PHOTO ERA

A MODERN MADONNA
BY MARY CARNELL

"LET ME, THY HAPPY GUIDE, NOW POINT THE WAY"
BY MYRA ALBERT WIGGINS

Grand prize print from Youth's Companion Contest

PHOTO ERA

MOTHER AND SON
BY W E MARSHAL

A FLASH–LIGHT PORTRAIT
BY WILLIAM S RITCH

forged writings with original documents impossible by any other method, and offers to the jury ocular proof of fraud and forgery that could be produced in no other way.

Photography in commercial work is becoming more and more important with each succeeding year. A glance through the advertising pages of the monthly magazines and illustrated papers will show to what extent it is used in exploiting manufactures. It helps to advertise the fast express, the ocean liner, and the dainty footwear necessary to successful pedestrianism. The mill or factory in which it does not find profitable employment at some stage of its productive process can hardly be named, and now its advent into the actual process of weaving on the Jacquard loom is said to be an accomplished fact.

When we review these marvelous developments and remember that they date back within the lives of many of us reading these lines, we may well stand aghast at the results that have been obtained; but another still remains more wonderful and more useful than any or all those above mentioned. In the development of photography and its application to the printing-press the greatest marvel of them all has been wrought, for by successfully applying it to the press, all the wonders of the other developments have become common property, so to speak; and the most wonderful scientific photograph that can be made may be cheaply and accurately reproduced for universal distribution. It is well for the busy worker to be confronted once in a while with material that may give him food for thought, a comparative view of what has been and is going on about him, and a point from which to gauge the progress of an art or science. By such a comparison an enthusiastic amateur derives new enthusiasm and the scientific worker takes on fresh encouragement.

Photography is still in its infancy and its field of usefulness is almost limitless. New lines of development will open out year after year, and it is probable that the amateur of the future will continue to develop the best that is in it as he has done in the past. Let the good work go on, remembering that there are other problems than that of color photography yet unsolved, and other fields than those that have been named requiring cultivation.

Let the PHOTO ERA flourish and grow great in the land, and let every other photographic and scientific journal continue to exert its influence for the development of photography, whether on artistic, scientific, commercial, or other lines. The press and the amateur have accomplished much for photography, but a great deal more lies undiscovered.

THE HOUSE-FLY AS A CARRIER OF DISEASE

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EVER since the plague of flies in Egypt, and probably long before it, the common house-fly has been a nuisance to mankind, but lately men of science have discovered that it is much worse than a nuisance, for it is both filthy and often dangerous to health.

The house-fly (*Musca domestica*) is particularly filthy because it has its birthplace and lays its eggs almost exclusively in horse manure, although, in the absence of this material, it will breed in the human excrement of our country outhouses, upon which excrement it also feeds. Our domestic animals, the dog and cat, though far from clean in all their habits, we like to have about us, but we keep them in their proper places. The house-fly, on the other hand, is generally tolerated everywhere. It crawls over hands and faces, it gets into milk, it walks over sugar and salt, over bread and cake, often soiling and contaminating everything that it touches with its filthy feet.

Flies are a menace to health, because, after walking and feeding upon filth, they can and sometimes do carry upon their feet and tongues the germs or seeds of diseases like dysentery and typhoid fever.

Unfortunately, the house-fly does not confine itself to any particular diet; but is often attracted from its meal of filth to food that is intended for our own use, and it takes advantage of every open, unscreened door or window to visit our kitchens and dining rooms, and may contaminate everything it touches with its germ-laden feet. Every one has seen flies like the one shown (see Fig. 1) walking over food, but few people know that on those six small feet and on the fly's tongue there may be thousands of the deadly microbes of disease.

In order to show more clearly how easily these germs of disease may be spread by flies, the photograph shown in Figure 2 was taken. Twelve hours before this picture was made a fly had walked around on the surface of a clear, transparent, nutrient jelly with which the glass dish had been filled. This fly's feet and tongue were covered with bacteria, for I had just seen it, a moment before, walk over a spot where I knew thousands of germs were present. As it crawled about on the jelly, it paused here and there to feed, and after its hunger was satisfied it flew away, leaving no visible sign to show that it had ever been there; the jelly *looked* as clean and pure as ever. Countless numbers of germs, too small to be seen save by the aid of the microscope, had, however, been planted there by the fly's feet and tongue.

Twelve hours later, when this photograph was taken, the dish of jelly having been kept in the meantime in a warm place, the groups of bacteria could easily be seen with the naked eye, just as the camera has here reproduced them. (See Fig. 2.)

During this time the germs had multiplied many thousand times. Each mass now represents a living colony, or, as it were, a city of germs, the smallest spot which can be seen on the plate containing many millions of them. The tracks of the fly as he walked along can be plainly made out, and midway between the fly's tracks in several places will be seen a number of small rounded spots or colonies. These came from the germs carried and planted by the fly's tongue, and they show

With respect to the photographs which are published in connection with this article, the pictures were taken with an ordinary lens, a 7-inch Goerz, which was the different places where the insect paused to feed as it walked along. The population of one of these colonies was counted, and forty-six million (46,000,000) germs were found to be present in a single spot. (They had, of course, multiplied many times after they were planted on the jelly by the fly's tongue.)

In a paper published in 1900 by Dr. L. O. Howard, Chief of the Division of Entomology at Washington, on "The Insect Fauna of Human Excrement, with Special Reference to the Spread of Typhoid Fever by Flies," it was shown that out of 23,087 flies which had been caught in different parts of the country, in rooms where food was exposed as would ordinarily be the case in a kitchen or dining room, more than 98 per cent of the insects so taken were ordinary house-flies (*Musca domestica*).

House-flies breed to a large extent in horse manure, but they are also often attracted by, and frequently develop in, human excrement. An individual fly lays on an average about one hundred and twenty eggs, which in a few hours hatch into larvæ or "maggots," and after another transformation the full-grown adult flies appear, ten days from the time the eggs were laid. Contrary to the popular belief, flies do not grow in size after their last transformation.

When we consider how exposed is the system so generally in use for the disposal of human excrement in rural districts, is it strange that typhoid fever so often occurs in the country? Under such circumstances every opportunity is offered for the spread of this disease through the agency of flies, particularly the house-fly, which finds in the stable and the country outhouse the conditions most favorable for its development.

It is therefore most important that flies should be kept away from all food supplies.

To this end every effort should be made, first, to do away with all places that are favorable for the breeding of flies. Horse manure should be kept in a closed pit, or the place where it is stored should be screened. Metal screens that will not rust are best for this purpose, but, unfortunately, they are too high-priced to permit of their being used by the majority of people who live in the country. Cotton mosquito netting, however, is not very expensive, and, though it will not last as long as the rust-proof metal screens, it is just as effective in keeping out the flies.

In the second place, screens or cotton netting should be put upon the kitchen and dining-room doors and windows, and a sheet or two of sticky fly-paper, which can be bought at nearly every country store, should be placed in all rooms where food is prepared, exposed, or eaten. Fly-traps, of which there are several varieties upon the market, are also of great use in destroying those flies which sometimes, in spite of nettings, find their way into rooms where the screen doors are frequently opened.

Finally, the privy should be thoroughly screened, or, better yet, where possible it should be done away with altogether. In no way can the wastes from the human body be more safely and easily disposed of than through the medium of water. Earth closets, where it is not practicable to introduce water for this purpose, are coming very generally into use, and it is to be hoped that before many years the old-fashioned country outhouse, with its exposure to flies and its many other objectionable features, will be a thing of the past.

stopped down to f. 43, and the pictures were secured with about a minute's exposure. In order to make the fly stand still for this length of time, he was given a slight whiff of chloroform, — not enough to in any way disable him, as he flew away after I had taken the picture. The picture of the bacteria which were left upon the jelly after the fly had walked over it is not magnified in any way; it is just the natural size of the plate, and all the little white specks, colonies of bacteria, could easily be seen by the naked eye just as they appear in the photograph. This sort of work — the photography of insects — is very interesting and sometimes of great value in scientific work. Nearly every one who has seen the pictures of mosquitoes (in the May issue) and fly has been very much astonished to learn that they were taken with an ordinary lens, without using any microscope.

THE PHOTO ERA PARTY ABROAD

THE PHOTO ERA party has now been at sea four days, and everybody expresses himself as charmed with the trip thus far. The weather has been delightful, the lower deck port-holes having been open the whole voyage, — an almost unprecedented occurrence.

We have turned the ship into a photographic workshop. It is full of cameras, — all films except one belonging to Mucha, the poster artist, who is using Lumiere plates. We have three developing machines in our party and are working them full time every day. We have gotten some very good negatives. Then we print them on Aristo Self-toning Paper and Eastman Mezzo-tone, which are very convenient for travelers. Every one on board is amazed at our enthusiasm and the fact that we are able to finish the pictures at once. The developing machine is responsible for it all.

I have been showing the June PHOTO ERA to M. Mucha, the French poster artist. He has criticized some of the pictures on the ground of poor arrangement of lines. Jean Bennett's picture with the crucifix was about the only one he suggested no change in. Most of his criticisms were for change in arrangement of lines, sometimes for change in space relation, trimming, or extending. It was very interesting. He is coming to America next winter and will have an exhibition in New York and Boston.

I delivered a lecture to-day in the dining room of the steamer on "How to use Your Camera in Europe," giving an outline of our trip and its purposes, and offering hints on what and where to photograph in Europe, facts on duties, permits to photograph, where to find materials, and have work done, etc. I had an audience of about forty people, and they seemed very much interested.

To-day we shall see England, and to-morrow night we will probably land. Then we go to Antwerp and Ghent, reaching Paris Wednesday night, June 29, staying there five days. Later we shall go on to Switzerland and then to Venice, where our party will be augmented to a hundred or more for the Italian trip.

Our experiences thus far have been of great benefit to all the members of the party, and there can be no question that a season spent in this kind of work and under such auspices will make skilful photographers of us all.

S. S. "Zeeland," At Sea, June 22, 1904. THE ASSOCIATE EDITOR.

FIG. 1

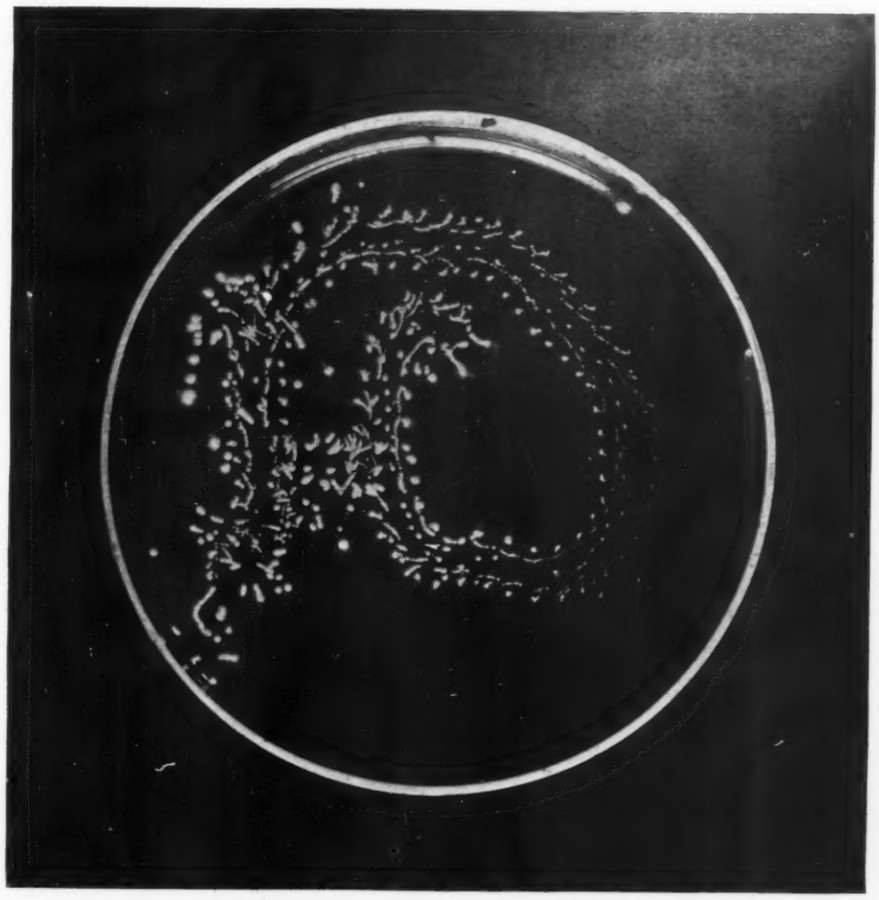


FIG. 2

BY CONRAD FREDERIC HAESELER

BY WILLIAM A WEBSTER

"Then shall my child go sweetly asleep
And dream of the birds and the hills of sheep."

GOOD NIGHT
BY A A GLEASON

Youth's Companion Contest Men's Class, Second Award

PHOTO ERA

AMONG THE ROSES
BY MRS W W PEARCE

PHOTO ERA

Editorial Department

AUGUST

THE coming of August is the turning-point of the season, something to be watched for, and its beauty remembered forever. Any change, however delicate, in the color of the leaves, the appearance of the forest, the songs of the birds, is as evident to the habitual wood-wanderer, and is more quickly noted by the camerist, than changes int he streets are by the city resident.

In July, the woodbine begins to prink itself out in gay scarlet, here and there a leaf blazing with intense color, as if trying beforehand bits of its autumn finery — as a girl holds a knot of ribbon to her throat to see whether the tone harmonizes with the rest of her dress. But in August the lance-shaped leaves of the gum-tree glow with a crimson so bright as almost to pain the eye.

The foliage of the shrubby sumac shows about the same time green, yellow, scarlet, and orange, — sometimes all of these colors in a single leaf; and in dusky glens the more delicate ferns have lost every vestige of color, and stand white as snow, — feathery ghosts revisiting their native dingle from some ferny heaven. In breezy upland pastures, and beside sunny lanes, the golden-rod, brighter in color than the butterflies which haunt it, glows like patches of unmoving sunshine. The bluebird's song at this time, though to careless ears the very same which he sang in spring, has, to a more acute listener, an undertone of sadness not heard at the beginning of the season. As Onora knew by the hills that her lover was a-near, so they tell us of autumn's approach before the secret is whispered to any but nature's truest lovers. Though the weather is still hot, the air has changed, for looking to the distant horizon the far hills shine with a transparent purple such as Summer never mixes on her palette of colors. Later in the season come two kinds of August days, differing totally in character, yet each so perfectly beautiful that they impress the mind like poems. The sun rises in fog, which slowly disperses, leaving a thin, dry mist on the hills, toning down their color to a gray-purple, and more than any tint in nature, suggesting infinite distance, perspective, and atmosphere.

CLAUDE LORRAINE

IT was scenes like this that Claude Lorraine, whose inimitable pictures are constantly referred to in our day as the highest standard of landscape art, loved to depict. Nature was his teacher. In the open fields, amidst enchanting scenery, under the beautiful Italian skies, he learned those principles and rules that made his pictures such models of excellence in drawing, composition, and coloring after the lapse of nearly three hundred years. From sunrise to "dewy eve" it was his custom to range through the country, watching the effects of light and shade, and making sketches of whatever objects or phenomena met his view, that he conceived would be useful to his future studies. Atmospheric changes were especially the subjects of his attention; and we are informed by Sandrart,

that Claude used to explain to him, as they walked through the fields, the causes of the diversity in appearance of the same prospect at different hours of the day, in respect to color, from the reflection or refraction of light, and from the evening or morning dews and vapors, with all the precision of a philosopher. He has the merit of being the inventor of the epic style in landscape painting, though his knowledge of the human figure was extremely deficient. There is hardly an effect in light or shade, a reflection in the water or in the sky, which he has not imitated in the most finished manner, so that he is said to have disputed veracity with Nature herself. What might not such a man have done with a camera! When in the zenith of his reputation, he had many imitators; to check whose attempted frauds he devised his "Libra di Verita," wherein he made drawings of his pictures as an authentic record from which posterity might verify their genuineness. It has been stated that six volumes of this inestimable collection were in existence at the time of his decease, one of them containing about two hundred subjects. From which it is easy to infer that, his was an infinite capacity for tāking pains, which some one has called genius.

"Therefore it was, that Claude into his power
Received the things he loved (the tender light,
The beauty, and the calm), and gave them forth,
A hundred-fold more fair; until his fame
Grew brighter than the skies he drew so well,
And hallowed him till death."

VALUE OF THE BEAUTIFUL

WHAT is the value in life of the purely beautiful? Emerson says: —

"If eyes were made for seeing,
Then beauty is its own excuse for being."

When we see it or possess it, we enjoy supreme happiness. It gladdens the heart and expands the soul. Beauty is closely akin to goodness, and it is precisely here that our appreciation as a people of the moral value of the beautiful fails. Our standard is not the eternal and spiritual standards. The highest prayer of the Greek was that he might be made "beautiful in soul"; of the Hebrew, that he might possess the "goodness of the Lord." Yet beauty and goodness should go hand in hand together. When the photographer or artist seeks beautiful pictures in nature, he is actually benefiting himself morally thereby.

To bring the soul into close and more sympathetic touch with nature is a gain in every way. It leads to a wider range of knowledge, and a larger exercise of the moral and intellectual faculties.

One of Ruskin's fundamental teachings was that art has a moral value. His insistence upon our seeking the beautiful in all our ways, upon our loving it and increasing it by honest work, was the expression of an intensely ethical nature. The great art teacher was foremost of all things a preacher — his motive was ultimately ethical. Esthetical or beautiful work was to be but the expression of a thoroughly honest or moral mind.

Photography and the arts have a high service for humanity. The man who would make beautiful pictures must have truth and beauty in his soul. This is the value of the purely beautiful.

THE NATIONAL HISTORIC PICTURE GUILD

WE desire to call attention anew to the work of our Historic Picture Guild. The enthusiasm of the various patriotic societies has given new life to the work. The idea of preserving in pictorial form the historic places of the country, passing rapidly away, must appeal to them very forcibly. It is, therefore, to their capable and energetic associations that the originators of the Historic Picture Guild look for support and encouragement. By their personal effort and friendly assistance they make it possible for the work to become an accomplished fact.

In each State there is a common center to which pictures may be sent. With few exceptions the capitals of the States have been chosen, and the historical or a patriotic society selected as custodians of the pictures. The members of the society look after the storing of the pictures, and send them to headquarters, where they are classified, mounted, and made ready for the complete collection. These must be not smaller than 4 x 5, nor larger than 8 x 10. A size between is desirable. Prints must be made on platinum paper, unmounted, and with the number and title written on the back in pencil. There must also be a description of the print, with a heading of the title and number. Platinum prints have been chosen because, with the exception of carbon, this paper is the most desirable.

The prints are mounted in Japanese sketch-books. This style of book has flexible covers, and instead of being bound, the leaves open, and the book may be opened out in its entirety. The color of the paper is a deep cream tint, and the paper itself is of so tough a fiber that it is practically indestructible. The pictures are mounted on the right-hand page, and the description of the picture with the name of the artist is on the left. In order to further protect the book it is slipped into a case with the names and the numbers of the books it is meant to hold on the outside. In case it is desired to exhibit these pictures the books may be opened full length and hung on the wall.

To carry on this work with success the Guild depends upon the work of amateur photographers in every State in the Union. Every amateur who can make a good negative and is in a position to make historical pictures is invited to join. The interest and service of many amateurs and professionals has already been pledged to this work. There is now enrolled a large charter list, and all who wish to come in should send their names without delay, as there are only a few lacking to complete the charter list of five hundred names.

If you are interested in preserving in pictorial form the landmarks of the nation, you are cordially invited to become a member of the National Historic Picture Guild in what promises to be the most important historical movement of the century.

THE WORLD'S FAIR

THE great educational value of the World's Fair at St. Louis should not escape attention from our readers at this time. Never before in the history of the world has there been gathered together such an aggregation of the forces and processes that make for the higher stages of civilization. It is the greatest architectural triumph the world has ever seen. We hope to be able to present our readers with a handsome World's Fair number in October, which will set this fact forth to good advantage.

The Round Robin Guild

Conducted by Elizabeth Flint Wade. Specially designed for the Amateur Photographer and the Beginner. Membership may be obtained by sending name and address to the PHOTO ERA.

THE members of the PHOTO ERA's first Foreign Photographic Tour are already across the water, and the letters which have come back to us from the party assure us that this first "personally conducted" photographic pilgrimage is already a success.

Under the skilful guidance of Mr. Fraprie the tourists will embalm on their gelatine plates picturesque scenery, magnificent public buildings, historic castles, beautiful churches and cathedrals, interesting old ruins, odd bits of architecture, and studies of quaint and curious folk, the whole making a picture note-book which will serve to keep the journey in ever fresh remembrance.

We envy them. There is no denying the fact, we envy them. However, compensation is the great law of life, and possibly we can apply it in our case and find, in a less extended area, subjects which in a way will be quite as interesting as those made in foreign lands.

Many of our Guild members live in villages, while others who now dwell in cities were villagers in their younger days. Possibly we have never looked upon our village home as a field for pictures, but with the idea in mind let us turn our attention to the consideration of its picturesque possibilities.

There is a charm about familiar scenes and people which foreign ones can never possess, and we shall find our village, "with inhabitants whose faces are as familiar to us as the flowers in our garden; where we know every one, are known to every one, interested in every one, and authorized to hope that every one feels an interest in us," a most interesting hunting-ground for pictures.

It was in "Our Village" — her village — that Miss Mitford found the material for those delightful sketches of country life and people which are the best known and best liked of any of her literary productions. We might do well to model the pictures of our village on the pen pictures which she gives us of the little town where she lived, and whose counterpart may be found in many of our own pretty hamlets.

Her village consists of a long, winding, straggling street at the bottom of a fine eminence. This would be the subject of our first picture, — a view of our village taken from a distance, and made by a telephoto lens or a telephoto attachment to the lens of the camera. The camera should be so placed as to show a view of the street; and as each building should be as clear as possible, a small diaphragm would be used and a sharp focus made.

Miss Mitford — addressing us as "Courteous Reader," that delightful personal appeal with which early writers engaged the attention of their admirers — says gently, "Will you walk with me through our village? The journey is not long. We will begin at the lower end and proceed up the hill."

We are delighted to accompany so pleasant a companion, and listen with delight as she points out the houses and describes their inmates.

"The tidy, square, red cottage on the right hand, with the well-stocked garden by the side of the road," she tells us, "belongs to a retired publican from a neighboring town. He hangs over his gate and tries to entice passengers to stop and chat; he volunteers little jobs all round, smokes cherry trees to cure the blight, and traces and blows up all the wasp-nests in the parish."

The next house we are told is that of the shoemaker, parted from that of the publican by another long garden, at the end of which is a yew arbor; and the house opposite is the blacksmith's, a gloomy dwelling where the sun never seems to shine.

A spruce brick tenement is next pointed out,

red, high, and narrow, and is distinguished from all other houses by having three sash-windows, the only ones in the village. Of course the village store is an object of great interest, for like all other village stores it is "the repository for bread, shoes, tea, cheese, tape, ribands, and bacon"; while the village inn is a place of importance, "a white-washed building, retired from the road behind its fine swinging sign." So we go on through the village, enjoying every step of the way, and getting an insight into the characters of the dwellers therein, — the best side of their characters, too, for there is nothing malicious or of a backbiting nature in Miss Mitford's delineation of their peculiarities.

We shall find in our own village just as interesting subjects. Of course we should not care to photograph every building in the village, so we select the most picturesque houses, — the village store, the church, the blacksmith shop, etc. Figures, of course, may be included in our pictures, making them still more interesting. This is the picture Miss Mitford presents of the street in her village : —

"A cart and a waggon watering at the inn; Dame Wheeler with her basket and brown loaf just coming from the bakehouse; the nymph of the shoe-shop feeding a large family of goslings at the open door, — they are very late, those noisy little geese; two or three women in high gossip dawdling up the street; Charles North, the gardener, with his blue apron and a ladder on his shoulder, walking rapidly by; a cow and a donkey browsing the grass by the wayside; and ducks, chickens, pigs, and children scattered over all."

Surely, one could find no more interesting subject for a series of pictures than awaits his camera in his own village. Mounted on large, wide-margined sheets of paper, bound together in an artistic manner, the series would make a book well worth preserving, a book to be admired, and withal a book whose duplicate should find a place in the village records.

Having such a book as an earnest of our summer's work, we shall cease to envy our fellow-craftsmen who have journeyed to far-off lands, and on their return shall gladly salute them as *hadjis*, and congratulate them heartily on their having won the right to wear the green turban.

Such books as Miss Mitford's "Our Village," Fredrika Bremer's "The Neighbors," Gilbert White's "Selborne," have a perennial charm.

"Let a man," says John Burroughs, "stick his staff into the ground anywhere and say, 'This is home,' and describe things from that point of view, and his account shall have an interest to us it could not have if not thus located and defined."

A series of pictures of a locality with which the amateur is familiar, where he knows the nooks and turns of the paths and lanes and fields and meadows may be as interesting, and the interest be as lasting, as are pen pictures of such places. The photographs supplemented with a running text, connecting one picture with the other, will add greatly to the pleasure of the ones who enjoy the pictures.

So despise not the "things that lie close at hand"; make the most of their pictorial possi-

FIRST PRIZE

The Brook in Spring Time — By Wayne C. Albee

bilities, and you will have pictures which are worth while.

BRUSH DEVELOPMENT OF PLATINUM PRINTS

ONE of the most interesting methods of making platinum prints is to develop them with a brush instead of immersing the print in the solution and developing as a whole. Brush development allows the amateur to subdue the high lights, restrain the shadows, and best of all to leave out of his print undesirable portions of the negative.

The process is not hard to learn, but, like everything else, it requires practise to become skilful. Before attempting brush development the beginner should make a print, — using any of the printing-papers he chooses, — and use this print as a guide in developing with the brush. The picture must be studied carefully and notes made of what parts are to be strengthened, what parts to be kept subdued, and what to be left out.

The materials are a sheet of plain glass at least two inches larger than the print, pure glycerine, a number of different sized brushes, and plenty of the blotting-paper prepared specially for photographic uses. The brushes required are two wide, flat ones, two medium sized round ones, and two fine pointed brushes for lines. All the brushes must be very soft, so that they will not injure or roughen the surface of the paper.

Prepare three glasses, one containing pure glycerine, one developing solution and glycerine in equal quantities, and one containing clear developer. Lay the print to be developed on the sheet of glass, and with one of the wide brushes coat it with glycerine, using long, even strokes and touching the paper lightly. A sheet of blotting-paper is now laid carefully over the print and pressed down softly. This will remove the superfluous glycerine, and will also insure its covering the paper thoroughly. Having noted the parts of the print which are to be subdued or left out entirely, cover those portions with a thick coating of glycerine, then with one of the medium sized brushes dipped in the glycerine and developer, go lightly over the portions to be brought out in the print. As soon as any part of the print has reached the depth desired, cover it immediately with the pure glycerine and be careful not to let any developer touch it. To bring out deeper tones, use the full-strength developer, but have the brush of glycerine ready to arrest the development before it passes beyond the correct tone.

If it is found that development has not gone far enough, then the glycerine is blotted off and a fresh coating of the developer applied.

As soon as the print is developed, transfer it to a tray containing the clearing bath, and with the second wide brush, brush it quickly over to remove the glycerine, which does not at once dissolve in the clearing bath. Three or four clearing baths are required, then the print is washed for ten minutes in running water, or in half a dozen changes of clear water if running water is not available.

A portrait with broad masses of lights and shadows may be made to resemble a charcoal drawing by using the glycerine diluted devel-

SECOND PRIZE

Brook in April — By Harry D. Williar

THIRD PRIZE

"With many a curve my banks I fret" By Paul R. Morrison

oper and brushing the solution on lightly, carrying development just far enough to get the charcoal effect. Outline prints may also be made, using the fine brush and following just the lines necessary to complete the picture. Some extremely interesting effects may be secured with the line development.

Sepia tones may be obtained by using the cold-bath sepia papers advertised in our columns. Mercury added to the regular developing bath gives warm tones; but in using this chemical great care should be taken both in handling it and in freeing all dishes and brushes from its traces. Muriatic acid the strength of the clearing bath will clean both trays and brushes effectually.

In landscape work one can obtain almost any effect, provided he has enough of an art training to enable him to produce an artistic picture instead of a smudge, as is often seen in brush-developed landscapes.

The prints for brush development should be printed deeper than for development by immersion; indeed, the printing may be carried far enough to give a well-defined picture, for the diluted developer enables one to stop development at any moment he chooses.

We hope members of our Guild will try brush development and send us some of their successful efforts.

A VERY decorative way in which passe-partouts may be used is to make a series of prints of uniform size on the same tone of paper. For a blue room use blue-prints; if in warm colors, as rose or pink, make gray prints; and for a yellow room use sepia or brown prints. Procure some very narrow picture molding (one half inch wide is quite wide enough) and attach a strip to the wall next to the casing of the window, using slender wire nails. Now, beginning at the bottom, arrange the passe-partouts one

above the other, holding each in place by one of the wire nails driven in close up to its head. When all are in place, fit a second strip of the molding over the free side of the passe-partouts. A similar panel is fitted to the other side of the window, and the two make a most unique as well as interesting decoration. A set of blue-print marines are specially pretty for a blue room, using a narrow picture beading of dull gold to hold them in place.

ROUND ROBIN GUILD PHOTOGRAPHIC COMPETITIONS

SUBJECT for the August competition, closing September 31, "Studies of Child Life."

Subject for the September competition, closing October 31, "Marines."

Any member of the Round Robin Guild may compete. If you are not a member of the Guild, send name and address and a membership card will be sent you. All photographs entered in the competition must be marked on the back with full name and address of the sender, and in addition must be marked "Round Robin Guild Competition for August" or whatever month the picture is designed for. If stamps are enclosed, the prints will be returned to the sender after the competition closes, except such as are reserved for reproduction. Address the package to "PHOTO ERA, Round Robin Guild Department, Boston, Mass."

First prize: A yearly subscription to the PHOTO ERA, *edition de luxe*, value $10.00.

Second prize: Five dollars in cash.

Third prize: Two dollars and a half in cash, or the choice of a yearly subscription to the PHOTO ERA or the *Practical Photographer*, American Library Series.

Fourth prize: One number of the *edition de luxe*, value $1.00.

Any questions in regard to the competition may be addressed to the editor of the department; and if stamps are enclosed, a reply will be sent by return mail.

Will competitors please comply with the rules of the competition, especially the ones pertaining to the mounting and marking of prints? The great number of photographs received at this office makes it necessary for the preservation and safe return of pictures not used, that each print be mounted and marked with name and full address of sender. Pictures sent to the recent competition have been unmounted and unmarked, and enclosed with a letter of advice. If letters and pictures become separated, as they are very likely to be, there is no way of discovering the owner.

Therefore, kindly mount and mark each picture if you send fifty, or if you send only one.

ANSWERS TO CORRESPONDENTS

M. F. B. — The hypo and alum toning bath for bromide prints is made by dissolving five ounces of hypo in thirty-five of water, heating the solution, and dissolving in it half an ounce of powdered alum. The alum turns the bath to a milky white, and should be made at least forty-eight hours before required for use. To use, heat to about 120° F., and immerse the bromide print in the solution; leaving it until the desired sepia tone is obtained. Wash well, and dry. Full directions for printing and toning bromide and gaslight papers will be found in the May number of the *Practical Photographer*. A copy will be sent you on receipt of price, 25 cents.

W. S. WARNER. — Le Page's fish glue is probably as good a fish glue as you can find. It comes in varying sized packages.

L. S. DAVIS. — The following is a good formula for acid hypo: Hyposulphite of soda, 4 oz.; acid bisulphite of soda, 1 oz. To use, dissolve first the hypo in 16 oz. of water and then add the bisulphite of soda. This bath will keep for some time without discoloring, and may be used until its fixing qualities are exhausted. Another acid bath is made by dissolving ¼ oz. of sodium sulphite and ¼ oz. of powdered alum in 1½ oz. of commercial acetic acid. This is added to a bath of hypo made up of 8 oz. of hypo and 36 oz. of water. The acetic acid solution is kept in a tightly corked bottle until needed for use, and the quantity of hypo required for the solution is weighed.

Then when ready for fixing the hypo is dissolved in the water and the acid solution added. This bath does not discolor.

DAVID S. WEGG, JR. — The new circulars will be mailed to you and to all the other members of the Guild on the first of August. Membership ticket has been sent you.

JOHN L. TUNISON. — There are no dues or fees in either the Round Robin or the Historical Picture Guilds.

ELIJAH F. MUNN. — See answer above to David S. Wegg, Jr.

D. L. DUTTON. — The reason why it takes so long to print from your negatives is that you carry the development too far and get them too dense. Develop just enough to get good detail. A picture is far more brilliant if printed from rather a thin negative than from one so dense as to require a long time to print. You can reduce the density of any of your negatives by using a bath made of potassium ferricyanide, 3 grains; hypo, 30 grains; water, 1 ounce. Make up as much as needed to cover the plate, lay it in the tray film side up, and leave until the plate is of the required density. Wash, and place in a hypo bath, 1 to 4, to remove all traces of the potassium. Wash well and dry.

C. C. B. — Opal plates are for positives and are exposed in contact with a negative in the same way as when making lantern slides by contact. They are also developed in the same way as a lantern slide. The length of time of exposure varies with the density or printing qualities of the negative.

MARION J. — You will find an article on Photo-Ceramics in the Round Robin Guild department of the PHOTO ERA for March, 1903.

PHOTOGRAPHIC EXHIBITIONS AND COMPETITIONS

SOCIETY OR TITLE	DATE	ENTRIES CLOSE	INQUIRE OF
Salon de l'Exposition, Arras	May 1–Oct. 4	Apr. 5	Comité de l'Exposition, Arras, France.
Louisiana Purchase Exposition	May–Nov.	Apr. 1	John A. Ockerson, Chief, Dept. Liberal Arts, St. Louis.
Twelfth London Salon	Sept. 16–Nov. 5	July 10	Alfred Stieglitz, care of G. F. Of, 3 E. 28th St., New York City.
International Photographic Exposition, Berlin	Oct. 1–30	Sept. 1–20	Herr Franz Goerike, Berlin, W. 62, Maassenstr. 32, Germany.
" Lantern-slide Competition	Oct. 15	Oct. 15	M. M. Vanderkindere, Palais du Midi, Brussels, Belgium.
" Stereogram Competition	Oct. 15	Oct. 15	M. M. Vanderkindere, Palais du Midi, Brussels, Belgium.
Hove Camera Club	Nov. 23–26	.....	A. R. Sargeant, 55, the Drive, Hove, Eng.
Southsea Photographic Society	Dec. 2–8	.....	F. J. Lawton, 20 Clarence St , Gosport, Eng.
Southampton Camera Club	Dec. 13–20	.....	S. G. Kimber, Oakdene, Highfield, Southampton, Eng.
First American Photographic Salon, New York	Dec. 1904	.....	S. C. Bullenkamp, 102 West 101st St., New York.
Third International Salon, Marseilles	Jan–Feb., 1905	.....	M. E. Astier, 11, rue de la Grande Armee, Marseilles, France.
Northern Photographic Exhibition	June–July, 1905	.....	F. G. Issott, 62 Compton Road, Harehills, Leeds, Eng.

GIVER	CLOSES	PRIZES
Burr McIntosh Monthly, New York (Beautiful Woman)	Aug. 1	$200.
Youth's Companion, Boston	Oct. 31	$430 in (10 prizes.)
PHOTO ERA, Boston	Nov. 1	$100 in 20 prizes.
The Graphic, London	Nov. 1	£20, £15, £10, £5, etc.
The Photographer, New York	Monthly	$15, $10.
Burr McIntosh Monthly, New York (Outdoor Photographs)	Monthly	$15, $10, $5.
" " " " " (Freak Pictures)	Monthly	$10, $5.
Photogram, Arundel St., Strand, London	Monthly	One guinea and half guinea.
The American Boy, Detroit	Monthly	$2, $1.
National Sportsman, Boston	Monthly	$5, $3, $1, $1.
Browning's Magazine, Boston	Monthly	$5, $3, $2.
The Book-Lover, New York	Monthly	$5, $3, $2, $1.
American Amateur Photographer	Monthly	$5.
Western Camera Notes, Minneapolis	Monthly	$5, $3, $2 in goods.
Leslie's Weekly, New York	Weekly	$10, $5, $1.
Buffalo Express	"	$5 to $25.
New York Evening Mail	"	$5.
Commercial Advertiser, New York	"	$3, $3, $2, $1.
St. Louis Star	"	$5.
Seattle Post Intelligencer (Western Scenes)	"	$2.50, $1.50.

Notes and News

A CABLEGRAM from Paris says: "The latest phase of the present inquiry in the Dreyfus case turns upon an erasure in one of the account books of the secret intelligence bureau, and is partly directed toward the discovery of the identity of the person whose name or pseudonym was erased.

"The representative of the court-martial who is engaged in the examination of the officers of that bureau now under arrest has ascertained that chemical treatment of the erasure for the purpose of revealing the word originally employed would not be certain to prove successful, while it would damage the paper. Consequently he has applied expert photography."

PHENOMENA OF THE N–RAYS

HUMAN bodies, the bodies of some animals, and certain inanimate substances, emit mysterious rays which have been denominated N-rays. Many European scientists have been investigating their properties of late, and have announced strange results.

By themselves these N-rays exert no photographic action, but they strengthen the impression produced on a photographic plate by an electric spark. When a nerve of an animal which emits these rays is excited in any way, the production of N-rays is increased; and from experiments with the rays emitted by the sciatic nerve of a frog, it has been discovered that they are oscillatory.

M. Jean Bacquerel, a French investigator, has found that the N-rays emitted by animals are checked when the latter are put under the influence of chloroform. When the effect of the anesthetic has passed, the emission of the rays begins again.

Continuing, he found that flowers, which usually sent out the rays, when chloroformed, also went to sleep, and ceased to give them out; and even inanimate and inorganic substances responded in the same way, stopping the emission when under the influence of chloroform, and beginning it again when the effect might be supposed to have worn off. In short, it seems that anesthetics actually send to sleep metals and flowers, as well as animals.

SCULPTURE BY PHOTOGRAPHY

THE *Scientific American* describes a most interesting "autoplastic" process whereby a bas-relief of a person or other subject is produced mechanically, by means of photography. The idea was developed by Prof. Carlo Balse, of Florence.

The model is photographed in a special way, and the plastic effect is produced by printing on a layer of chromium gelatine, which has the singular property of swelling in proportion to the amount of light that it is subjected to. Beautiful relief portraits have thus been produced, purely by the aid of light and without any hand work.

COLOR PHOTOGRAPHY

A PRINTING process in colors which has novel points has been invented by Herr Szezapanik, and was recently brought under the notice of the London Camera Club. The process utilizes a special kind of prepared paper which is coated first of all with collodion or gelatine stained blue, next with one stained yellow, and finally with a surface stained red. These colors are of such a fugitive nature that when the paper is exposed to light they are destroyed. But if during exposure the paper is covered with a colored original, say a stained glass window, the colors in the original preserve the colors buried in the paper, and they are not obliterated. In other words, a colored transparent picture is exactly reproduced on the paper placed beneath it under the action of light.

Specimens which were examined by the members of the Camera Club proved the process to be a practical one. The colors remaining on

Bausch & Lomb PLASTIGMAT F/6.8

Optically and mechanically the latest and highest achievement in photographic lens construction. Meets all requirements and produces a perfect image, giving superior pictorial effect. There is no symmetrical anastigmat equal to it. Can be fitted to any camera. Send for specimen pictures.

Souvenir Portfolio

Another edition of this popular symposium of good lighting, good composition, and good pictorial photography is now fresh from the press. It contains half-tone reproductions, as nearly as possible in the original colors, of the 60 photographs which received the judges' awards in our $3,000.00 competition. Measures 9 x 12 inches. Heavy plate paper. Sixty-four pages. Bound in art bristol with silk cord. No advertising matter. Sent for 25 cents, stamps or coin.

Bausch & Lomb Optical Co.
Rochester, N. Y.

NEW YORK, BOSTON, CHICAGO, U. S. A. FRANKFURT a. M., GERMANY

the paper after exposure to light can be fixed by a mordant so as to become permanent. Unfortunately the necessary exposure to light is a protracted operation; otherwise it would be possible to expose the paper in the camera and get a colored picture direct — that is, a facsimile of the beautiful image seen in the focusing screen of the instrument. The inventor is said to be prosecuting experiments with a view to make this possible. Should he be successful, the art of photography would at once undergo a complete revolution.

THE Philadelphia Photographic Society announces a competition, the object of which is to demonstrate the pictorial possibilities of the city of Philadelphia. An infinite variety of subjects is permissible: Street scenes, architecture, genre, — the quaint figures and groups that may be found in the various slums and foreign quarters of the city — even landscape is allowable, the only restriction being that the exposure must have been made inside the city limits. Of course, studio work and the like is barred.

Photographs, under this broad classification, are invited from all camera workers, not necessarily members of the Society, along pictorial lines.

Not more than five (5) prints will be received from any one competitor.

Prints may be of any size and in any medium and may be framed or unframed, but if unframed, must be suitably mounted.

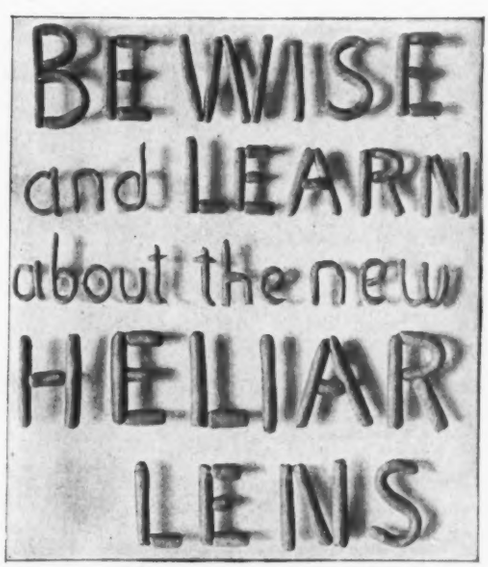
All prints submitted must be legibly marked on the back with title, the location where the exposure was made, and the competitor's name and address, and must be delivered, carriage prepaid, at the Society's house, 1722 Arch St., Philadelphia, on or before Nov. 15, 1904.

THE Bausch & Lomb Optical Company, Rochester, N. Y., has just placed on the market the new Zeiss lens, — Tessar f. 6.3. According to the business arrangements between this large American company and the firm of Carl Zeiss of Jena, the Rochester factory is now turning out this new objective in large quantities after the original formulas of the inventor, Dr. P. Rudolph, and employing the new Jena glass recently discovered and now manufactured especially for the Tessar series. Bausch & Lomb, having completed the arrangements necessary for the production of this new lens, have announced their ability to give immediate attention to all orders. Literature descriptive of Tessar may be had from photographic dealers throughout the country or upon request from the company's office at Rochester, or the various branch offices.

From the fact that this new objective is a result both of the most recent optical computations of a member of the famous Zeiss staff of scientific experts, and likewise of the newest optical glasses, it is a somewhat difficult matter to adequately describe its merits.

Tessar construction is simple compared with that of some of the other Bausch & Lomb-Zeiss series. It is an unsymmetrical doublet of four thin lenses, the rear pair cemented, the front uncemented. Through the successful application of the formulas and the character of the new glass, the manufacturers have produced a lens of remarkable light-gathering and light-transmitting power. The separation between the lenses is ample for the fitting of the Volute or Iris Diaphragm shutter.

Tessar works at a speed of f. 6.3, which is sufficiently rapid for all instantaneous work. The great quality of the lens, however, is that this rapidity is combined with perfect definition over a field of wide angular extent. The image is uniformly and precisely clear and sharp from the center to the margin of the plate. Tessar is adapted to hand-camera work, portraiture, groups, landscapes, industrial and reproductive photography, copying, enlarging, and projection. For amateur use its compactness and moderate price are two great recommendations, but its chief claim to a place of dignity and importance among the highest grade photographic lenses will be found to lie in the fact that where uncommon requirements of instantaneous and professional photography are met with, Tessar's ability to produce the most perfect results is not to be questioned.



For particulars and catalogue write to

VOIGTLAENDER & SON OPTICAL CO., 129 West 23rd St., New York

We are glad to call attention to the well-merited success that has come to the Photo Fabric Company, of Lyndonville, Vt. This company, organized in June, 1903, is engaged in the manufacture of photographic pillow tops and advertising novelties. The merit of their products has been so recognized by the Official Photographic Company, of the Louisiana Purchase Exposition, that they have been granted exclusive control of photographs on cloth at the World's Fair.

Mr. Charles P. Dimmick, the president of this company, has done much to raise the standard of this class of photographic work, and has popularized the process among the amateurs of the country. He is the originator and successful promoter of all kinds of photographic work on cloth, and much of the success that has thus far attended the company he has organized is due to his efforts.

The idea of combination printing on cloth for artistic effects is being worked out very effectively by them, and is sure to result in the near future in some very pleasing novelties for the advertising world. Their exhibition at the World's Fair is, perhaps, the finest in this line that has ever been seen, and we extend our congratulations and best wishes for future progress and success.

At the fifteenth annual convention of the Nebraska Photographers' Association the following officers were elected : President, A. C. Townsend, of Lincoln, reelected; John F. Wilson, of Pawnee City, first vice-president; D. W. Wright, of Nelson, second vice-president; C. J. Fennell, of Schuyler, secretary; W. P. Fritz, of Fremont, treasurer.

"Kaiser Wilhelm," says the New York *Tribune*, "seemingly has a tolerant and amiable spirit toward the diligent and industrious knights of the camera. It is said that he was photographed several hundreds of times in the course of his observation of the great international race for automobiles. The entire route was thoroughly guarded, and if the imperial war lord had given orders that portrait takers should be kept in check, the user of films would have been sternly thrust aside. Evidently the famous ruler of a mighty empire does not regard snap-shots as *majestatsbeleidigung*."

The California Camera Club visited the World's Fair in June, stopping at the Inside Inn. The club "did" the Fair until July 6. There were thirty-two in the party, about equally divided men and women. This club takes an outing each year, and more than a year ago decided to visit the Exposition. The members of the club went prepared to take pictures and made a systematic tour of the Fair grounds.

The Southern Tri-State Photographic Association held its first annual convention in Atlanta, Ga., on July 5, 6, and 7. The session was held at the Piedmont Hotel. Delegates came from Georgia, Mississippi, and Alabama.

Fully three hundred photographers belong to the association. The following are the officers: W. N. Stephenson, of Atlanta, president; Chas. R. Turner, of Tuscaloosa, Ala., secretary; F. S. McKnight, of Aberdeen, Miss., treasurer; vice-president, C. W. Motes, of Athens, and M. E. Wilson, of Savannah, for Georgia; E. B. Peddington, of Birmingham, and W. M. Reed, of Mobile, for Alabama; C. G. Bell, of Greenville, and N. L. Wingo, of Jackson, for Mississippi.

Queen Alexandra, of England, has brought a large number of photographs and negatives from Ireland. These will be mounted in albums and presented to relatives and friends.

Her Majesty, who used her kodak very freely during her recent Irish visit, has not contented herself with taking beautiful bits of scenery, but has "snap-shotted" stopping-places, groups of friends, crowds, and would-be snap-shotters themselves.

It will be an even larger and more interesting collection than that which the Queen obtained during her recent visit to Denmark, when she took numerous snap-shots of her aged father, the King of Denmark, and the many royal persons gathered at Copenhagen.

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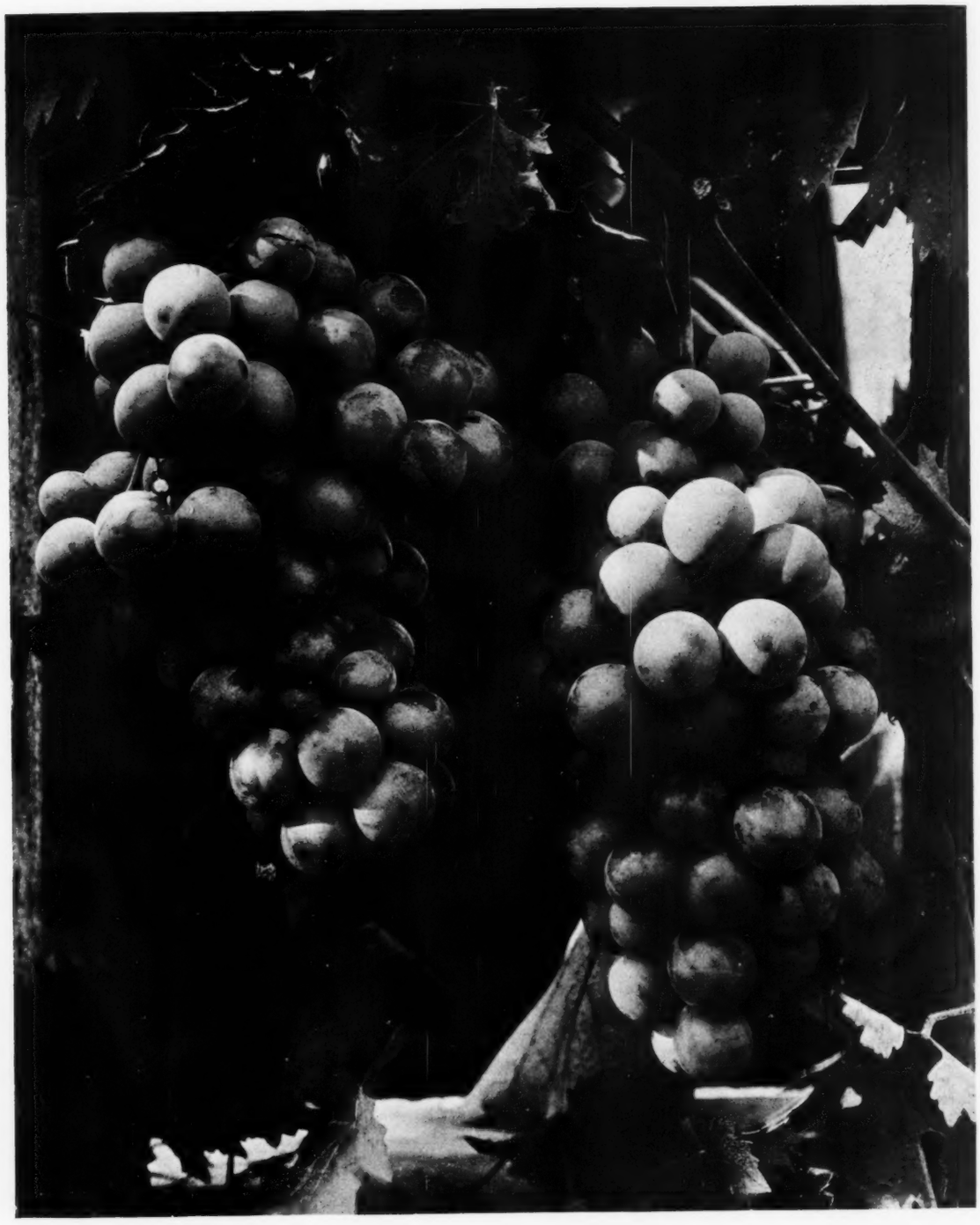

GRAPES
BY E H LINCOLN

PHOTO ERA